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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,753	01/30/2002	Junya Shirahata	111850	5600

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EXAMINER
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TRAN, HIEN THI

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/058,753	SHIRAHATA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hien Tran	1764	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/28/02 &amp; 2/20/04</u> . | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> .           |

*22*

Continuation of Attachment(s) 6). Other: machine translation of JP 05-086843.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "303" (Fig. 11). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings to comply with CFR 1.84(p)(5), e.g. they should include the reference sign(s) mentioned in the specification and vice versa.

### ***Specification***

4. The disclosure is objected to because of the following informalities:

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On page 5, lines 9 and 14 “radical” should be changed to --radial--.

On page 9, lines 17, 23 and 25 “circumferencial” should be changed to --circumferential--. See the remaining specification and abstract likewise.

On page 10, line 25 “an” should be changed to --a--. See page 13, line 24 likewise.

On page 15, line 2 one of the two “St” should be deleted.

On page 17, line 26 “Sc/S” should be changed to --Sc/St--.

On page 22, line 26 “4a” should be changed to --4e-- (note line 15).

Appropriate correction is required.

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

#### ***Claim Objections***

6. Claims 1-14 are objected to because of the following informalities:

In claim 1, line 11 “circumferencial” should be changed to --circumferential--. See claims 5, 7-10 likewise.

In claim 11, line 7 --flat-- should be inserted before “plate” (second occurrence).

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 6, 9, 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, lines 2-3, it is unclear as to what is intended by “placed in ...a radial direction”.

In claim 9, it is unclear as to where the “second blowing passage” is shown in the drawings, it appears that the second supporting member closes the space between the inwall surface of the exhaust way and the outer circumferential surface of the second catalyst portion as shown in Fig. 3.

In claim 14, it is unclear as to what structural limitation applicants are attempting to recite. It appears that the claim is merely directed to an intended use without structurally further limiting.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. The art area applicable to the instant invention is that of an exhaust gas purifying apparatus.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

12. Claims 1-2, 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-086843 in view of Kaji (5,272,875).

With respect to claims 1, 10-11, JP 05-086843 discloses an exhaust gas purifying apparatus comprising:

an exhaust pipe 23 for forming an exhaust way communicated with an exhaust port 22 of an engine; said exhaust way of the exhaust pipe having a first mounting position and a second mounting position disposed at the downstream side with respect to the first mounting position; and

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a catalyst disposed in said exhaust way for purifying an exhaust gas; said catalyst having a first honeycomb catalyst portion 27 placed at said first mounting position of said exhaust way and a second honeycomb catalyst portion 26 placed at said second mounting position of said exhaust way, said first honeycomb catalyst portion 27 having an outer circumferential surface for forming a blowing passage with an inwall surface of said exhaust pipe and including a first carrier with a plurality of holes being along a length direction of said exhaust way of said exhaust pipe, said second honeycomb catalyst portion including a second carrier, wherein

the first honeycomb catalyst portion 27 has an outer diameter smaller than the bore of the blowing way defined by said inwall surface of said first mounting position of said exhaust way with said first honeycomb catalyst portion being removed (section 0016, Figs. 1-3). Fig. 3 of JP 05-086843 shows that the radial cross section area in a catalyst region of said honeycomb catalyst portion 27 falls within the instant  $1/5 - 2/3$  range with respect to the radial cross sectional area of a blowing way defined by said inwall surface of said first mounting position of said exhaust way with said first honeycomb catalyst portion being removed.

The apparatus of JP 05-086843 is substantially the same as that of the instant claims, but fails to disclose whether the first and second catalyst portions may be metallic honeycomb carriers.

However, Kaji discloses the conventionality of providing first and second metallic honeycomb carriers having metallic wave plate and metallic flat plate brazed together.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to alternately select metallic material for the first and second catalyst portions as taught by Kaji in the apparatus of JP 05-086843, on the basis of its suitability for the



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intended use as a matter of obvious design choice and since such material is conventional in the art and no cause for patentability here.

With respect to claim 2, JP 05-086843 discloses that said exhaust way of the exhaust pipe includes a small diameter portion with said first mounting position disposed at the upstream side of the exhaust way, and a large diameter portion with said second mounting position disposed at the downstream side in the exhaust way with respect to said small diameter portion; and wherein said first honeycomb catalyst portion is placed in said small diameter portion and said second honeycomb catalyst portion is placed in said large diameter portion (Fig. 2).

With respect to claim 5, JP 05-086843 discloses that said first honeycomb catalyst portion 27 is installed at said first mounting position of the exhaust way by a supporting member 33 placed between the inwall surface of the exhaust way and said outer circumferential surface of said first honeycomb catalyst portion 27 (Fig. 2).

With respect to claim 6, JP 05-086843 discloses that said first honeycomb catalyst portion 27 and said second catalyst portion 26 are placed in the central region of the exhaust way of the exhaust pipe (Fig. 1).

With respect to claims 7-9, although JP 05-086843 fails to disclose whether a second support member may be used for supporting the second catalyst portion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the support member 33 for supporting the second catalyst portion in the apparatus of JP 05-086843 as such supporting member is conventional in the art as evidenced by the supporting member 33 of JP 05-086843.

With respect to claim 10, JP 05-086843 discloses provision of a sleeve for each catalyst portions (Figs. 2-3, 5).

With respect to claim 12, Fig. 3 of JP 05-086843 shows that the ratio of the radial cross sectional area  $S_c$  in the catalyst region of the first catalyst portion 27 and the area of the blowing passage  $S_b$  falls within the 0.25-2.06 range.

With respect to claim 13, Fig. 1 of JP 05-086843 shows that the second catalyst portion 26 is larger than the first catalyst portion 27.

With respect to claim 14, JP 05-086843 discloses that the apparatus is used for an exhaust system of an engine of motorcycle (claim 1, sections 0007, 0012-0013, etc.).

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-086843 in view of Kaji (5,272,875) as applied to claims 1-2, 5-14 above, and further in view of Reck et al (DE 195 30 142 - corresponding to US 6,689,327).

The modified apparatus of JP 05-086843 is substantially the same as that of the instant claims, but is silent as to the density of the holes.

However, Reck et al discloses provision of a first honeycomb catalyst having a density of 25-200 cpsi.

It would have been obvious to one having ordinary skill in the art to select an appropriate density for the first honeycomb portion in the modified apparatus of JP 05-086843 on the basis of its suitability for the intended use as a matter of obvious design choice as evidenced by Reck et al and since use of such density is conventional in the art and no cause for patentability here. Note that it has been held that where the general conditions of a claim are disclosed in the prior

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art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-086843 in view of Kaji (5,272,875) as applied to claims 1-2, 5-14 above, and further in view of Yasaki et al (5,352,554).

JP 05-086843 is silent as to the specific axial length of the first catalyst portion with respect to its diameter.

Yasaki et al shows in Fig. 2 that the axial length of the first catalyst portion 3 falls within the instant range of 0.5 -1 times as long as the diameter of the first catalyst portion.

It would have been obvious to one having ordinary skill in the art to select an appropriate length of the first catalyst portion such as the one taught by Yasaki et al in the modified apparatus of JP 05-086843 since it has been held that where the general conditions of a claim are disclosed in the prior art, merely discovering the relative dimension involves only routine skill in the art. *In re Gardner v. TEC systems, Inc.* 725 F.2d 1338, 220 USPQ 777.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Hien Tran*

HT  
March 24, 2005

**Hien Tran**  
**Primary Examiner**  
**Art Unit 1764**